

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Toshio ANZAI

Appln. No. Not Yet Assigned

Confirmation No.: Not Yet Assigned

Group Art Unit: Not Yet Assigned

Filed: March 04, 2002

Examiner: Not Yet Assigned

For: POWER SYSTEM MANAGEMENT METHOD AND POWER SYSTEM MANAGEMENT METHOD  
AND POWER SYSTEM



INFORMATION DISCLOSURE STATEMENT  
UNDER 37 C.F.R. §§ 1.97 and 1.98

Commissioner for Patents  
Washington, D.C. 20231

Sir:

In accordance with the duty of disclosure under 37 C.F.R. § 1.56, Applicant hereby notifies the U.S. Patent and Trademark Office of the documents which are listed on the attached Form PTO-1449 and/or listed herein and which the Examiner may deem material to patentability of the claims of the above-identified application.

One copy of each of the listed documents is submitted herewith.

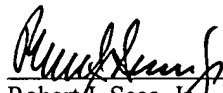
The present Information Disclosure Statement is being filed: (1) No later than three months from the application's filing date for an application other than a continued prosecution application (CPA) under § 1.53(d); (2) Before the mailing date of the first Office Action on the merits (whichever is later); or (3) Before the mailing date of the first Office Action after filing a request for continued examination (RCE) under § 1.114, and therefore, no Statement under 37 C.F.R. § 1.97(e) or fee under 37 C.F.R. § 1.17(p) is required.

In compliance with the concise explanation requirement under 37 C.F.R. § 1.98(a)(3) for foreign language documents, Applicant submits the following explanations:

English language abstracts of the foreign language documents are submitted herewith as concise statements of relevance.

The submission of the listed documents is not intended as an admission that any such document constitutes prior art against the claims of the present application. Applicant does not waive any right to take any action that would be appropriate to antedate or otherwise remove any listed document as a competent reference against the claims of the present application.

Respectfully submitted,

  
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## Information Disclosure Statement

Regarding our US patent application, we hereby submit an Information Disclosure Statement as follows:

National Meeting of the Japanese Institute of Electrical Engineers in 1999

1601 Protection and Control System applying Intranet Technology-Concept

### 1. Introduction

Under the recent trend of large scaled and complicated power system, cost reduction in the protection and control system and efficient operation of equipment has been increasingly demanded. In the meantime, recent years, information system utilizing Internet Technology have been highly advanced at a high speed.

This article proposes a new protection and control system to which Internet and Intranet Technology is applied.

In the proposed system, a general-purpose and standard information communication technology is applied to protection and control apparatus distributed and arranged in wide area of power system. The protection and control apparatus, Web server and browser disposed in the control station and office are combined on the communication network, and transfer, processing and edition of the information between them can be performed flexibly as is described in the Power Intranet concept in the Document 1). As a result of such arrangement, it becomes easy to establish the system and operation efficiency is also improved.



## 1602 Protection and Control System applying Intranet Technology-Architecture

### 1. Introduction

It seems that in the future the general-purpose network represented by Internet will play a main role in the entire society. We've developed a NCU (Network Computing Unit) substrate having the Network computing function for a built-in control device such as relay by applying the Internet technology to the protection and control system, and basic software for the NCU. We hereby report them as follows.

### 2. The characteristics of protection and control system applying Intranet technology-architecture

We have developed hardware and basic software capable of constituting the protection and control system of power system characterized in that:

- (1) Substation equipment such as digital relay can be easily connected to the general-purpose network;
- (2) System information can be collected by Intranet, displayed and operated by the general-purpose web browser; and
- (3) Required function can be fetched in through the network whenever required.

It is considered that especially the item (3) is useful and advantageous in the aspect of cost for built-in control device, such as digital relay of limited hardware resources.

## 1603 Protection and Control System applying Intranet Technology-Application

### 1. Introduction

Recently, information system has been rapidly progressed due to Internet technology. Meanwhile, still further cost reduction of the system has been increasingly demanded by utilizing efficiently information of protection and control system of power system.

We have manufactured on the trial basis the protection and control system provided with the network computing function by applying the Internet technology to the protection and control system distributed and arranged in wide area. We explain the system as follows.

### 2. System arrangement of trial manufacture

Fig. 1 shows the appearance of the system that has been manufactured on the trial basis this time.

In order to verify the representative function of substation, in this system, three kinds of equipment for three substations (transmission line protection and control equipment, transformer protection and control equipment, and bus communication protection and control equipment) have been tried to manufacture. These three kinds of equipment have been connected to one server and eight browsers through Esther net LAN.

#### (5) Mobile Agent

The following three models have been studied and arranged:

-Inspecting agent: This agent conducts moving inspection in substitution for man between one device and another to inspect the state of plural devices.

-Settling agent: This agent conducts settling of plural devices all at once, or stays at any device to watch a system state, and after confirming any change in the system state, moves to other device and change the settling value. (applicable to adaptive relay)

-Analyzing agent: This agent moves between one device and another when any accident has occurred, and collects necessary data. Fig. 4 shows the movement of the inspecting agent.

Substitute for form 1449 A & B/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				<i>Complete if Known</i>	
				Application Number	Not Yet Assigned
				Confirmation Number	Not Yet Assigned
				Filing Date	March 04, 2002
				First Named Inventor	Toshio ANZAI
				Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned				
Sheet	1	of	1	Attorney Docket Number	Q68496



U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
		Number	Kind Code <sup>2</sup> (if known)		
		US			
		US			
		US			
		US			
		US			
		US			
		US			
		US			

FOREIGN PATENT DOCUMENTS							
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Translation <sup>6</sup>
		Country Code <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)			

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city, and/or country where published.	Translation <sup>6</sup>
		Sekiguchi, Katsuhiko et al., "NC Relay: Protection and Control System applying Internet Technology-Concept", National Meeting of the Japanese Institute of Electrical Engineers in 1999, 6-462, 1601	
		Shimoo, Manubu et al., "NC Relay: Protection and Control System Applying Internet Technology-Architecture", National Meeting of the Japanese Institute of Electrical Engineers in 1999, 6-463, 1602	
		Shirota, Yoshihiro et al., "NC Relay: Protection and Control System applying Internet technology-Application", National Meeting of the Japanese Institute of Electrical Engineers in 1999, 6-464, 1603	

Examiner Signature		Date Considered	
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov), MPEP 901.04 or in the comment box of this document. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST. 3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to indicate here if English language Translation is attached.